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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/250,770	05/27/1994	YONG-GEUN KIM	P53706	1721

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EXAMINER

PHAM, HAI CHI

ART UNIT PAPER NUMBER

2861

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

08/250,770

Applicant(s)

KIM, YONG-GEUN

Examiner

Hai C Pham

Art Unit

2861

MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 25-26, 30, 32, 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanashi et al. (U.S. 5,250,939) in view of Tomita et al. (U.S. 4,918,462), Hayashi et al. (U.S. 4,989,039) and Onuma et al. (U.S. 4,806,949).

Takanashi et al. discloses a drive apparatus for optical element array comprising a data transmitting unit for generating converted data by converting input data (PIX), to be printed as video data, in accordance with a first clock signal (CLK), and for transmitting the converted data in response to a horizontal synchronization signal exhibiting a predetermined time interval (col. 2, lines 50-56), and a chopping unit (chopper 18). Takanashi et al. further teaches the provision of a plurality of clock signals of different phases (CLKA-CLKC, Figs. 5-6) that can be selected (selector 120) in accordance with data received and separated from the input data (DIN0 and DIN1). However, Takanashi et al. fails to teach the first and second dividers for generating the first and second signals by dividing the initial clock by a predetermined ratio different from each other, as well as the chopping unit being comprising AND gate (instead of NAND and NOR gates as disclosed in Fig. 5).

However, Tomita et al. discloses chopping means (3) providing chopped data by dividing data from a data transmitting means (4) in accordance with a clock signal (STB) from the combination of pulse signal generating circuit (6) and pulse signal selection circuit (7), illustrated in detail in FIG. 11. The Tomita et al. chopping means (3) controls provision of beam data by a print control means (2), thereby changing the power level of a light source (element array 1). The pulse selection input to pulse signal selection circuit (7) is deemed to be a mode selecting means and the pulse selection signal is deemed to be a dividing ratio component which is broadly interpreted as being a component of the input data, as it is data which must be input along with pixel data to operate the apparatus. On the other hand, Hayashi et al. teaches that it is known in the art to change a power level of a light source in an electrophotographic developing type reproduction apparatus in accordance with changes in environmental conditions, thereby facilitating provision of an image forming apparatus capable of forming an image with satisfactory tonal rendition regardless of changes in environmental conditions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Tomita et al.'s AND gate circuit chopping means, pulse signal generating circuit with Takanashi et al. apparatus. The reason for the combination is to enable change of power level of the admitted prior art light source in accordance with changes in environmental conditions, thereby facilitating provision of an image forming apparatus capable of forming an image with satisfactory tonal rendition regardless of changes in environmental conditions.

On the other hand, Onuma et al. discloses a recording method and apparatus provided with a chopping means as an AND circuit (59) for chopping the width of the strobe timing signal in accordance with the environmental condition of the recording head, e.g., temperature information of the recording head, such that the tone data is applied to the recording head in synchronism with the chopped strobe signal, wherein the upper bits  $D_1$ - $D_5$  of the input data are conveyed on a first data line of the data bus and the lower bit  $D_0$  of the input data on a second data line of the data bus to be stored in the multiplexer (43) (Fig. 3).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to implement the structural data bus as taught by Onuma et al. in the modified device of Takanashi et al.

The steps of the method recited in claim 34 are deemed to be made clearly obvious by the functions of the structure of the combination discussed above. With regard to claim 35, Takanashi et al. further teaches the frequency of the clock signals CLKA-CLKD can be doubled or quadrupled such that the advanced pulse width modulation signal can accurately respond to image data.

3. Claims 27-29, 31, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanashi et al. in view of Tomita et al., Hayashi et al. and Onuma et al., as applied to claims 25, 30, 34 above, and further in view of Wiklof et al. (U.S. 5,625,399).

The modified device of Takanashi et al. discloses all the basic limitations of the claimed invention except for the user-enabling selecting mode.

Wiklof et al. discloses a method and apparatus for forming image provided with a chopped means for chopping the strobe timing signal in accordance with the print element's temperature as well as the darkness preference and/or print speed inputted by a user through a keypad such that the strobe signal can be adjusted (col. 10, lines 11-32).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the selecting mode for enabling user's selection as taught by Wiklof et al. in the modified device of Takanashi et al. The motivation for doing so would have been to provide a customized and flexible printing apparatus where the strobe timing signal can be adjusted at the selection of the user.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 25-35 have been considered but are moot in view of the new grounds of rejection presented in this Office action.

### ***Conclusion***

5. Applicant's amendment, which changed the scope of the claims, necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within


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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM  
PRIMARY EXAMINER

November 14, 2003